Date: April 10, 2016

WMO Headers for RAP AWIPS Puerto Rico grid (200) products

The following WMO headers information is for RAP data for Puerto Rico on AWIPS.

16 km grid covering Puerto Rico (Lambert Conformal)

1. Forecast hours

The forecast hours start from 00 and go to 21 at every hour. See below:
00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21

This covers the data on 16 km RAP grid 200 which covers the area around and including Puerto Rico.

2. The RAP model runs at every hour (00Z - 23Z)

3. WMO Headers WMO Header template: **T1 T2 A1 A2 ii cccc**
cccc is **KWBG** where G is the Rapid Refresh (RAP)

All WMO headers have **KWBG**
- T1 = Y for forecast hours: 00, 01, 02, 03, 04 , 05, 06, 07, 08, 09, 10
11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21

- T2 specifies parameter as follows:
A - Dew Point Temperature (DPT)
E - Total precipitation (APCP)
G - Convective Precipitation (ACPCP)
M - Categorical Rain (CRAIN)
F - Precipitable water (PWAT)
H - Height (HGT), Height of planetary boundary layer (HPBL)
T - Temperature (TMP) / Equivalent Potential Temperature (EPOT) / Simulated Brightness Temperature (SBT)
U - U-component of wind (UGRD); u-Component Storm Motion (USTM)
V - V-component of wind (UGRD); v-Component Storm Motion (VSTM)
N - Wind Gust Speed (GUST)
Q - Best (4 layer) lifted index (4LFTX)
X - Surface lifted index (LFTX)
W - Convective available potential energy (CAPE)
O - Vertical Velocity (VVEL)
Y - Convective inhibition (CIN)
J - Precipitation Rate (PRATE)
C - Low, Middle, High Cloud Fraction (LCDC/MCDC/HCDC)
R - Relative or Specific Humidity (RH/SPFH)
P - Pressure Surface (PRES), Pressure Mean Sea level (PRMSL)
Z (Refer to GRIB PDS)
- Storm-Relative Helicity (HLCY)
- Simulated Composite Reflectivity (REFC)

- Land Mask (LAND)
- Lightning (LTNG)
- Haines Index (HINDEX)
- Simulated Composite Reflectivity (REFC)

- A1 specifies the grid id as follows:
P - 16 km NDFD grid over Puerto Rico (Lambert Conformal)

- A2 specifies the forecast hours as follows:
A = 00; B=01; C=02; D=03; E=04; F=05; G=06; H=07; I=08; J=09; K=10;
L=11; M=12; Z=13; Z=14; Z=15; Z=16; Z=17; N=18 Z=19, Z=20, Z=21

- ii specifies level as follows:
00 = Entire Atmosphere
99 = 1000mb; 93=975mb; 95=950 mb;92=925mb; 90=900mb; 91=875mb; 85=850mb; 82=825mb; 80=800mb; 77=775mb; 75=750mb; 72=725mb; 70=700mb; 67=675mb; 65=650mb; 62=625mb; 60=600mb; 57=575mb; 55=550mb; 52=525mb; 50=500mb; 47=475mb; 45=450mb; 42=425mb; 40=400mb; 37=375mb; 35=350mb; 32=325mb; 30=300mb; 27=275mb; 25=250mb; 22=225mb; 20=200mb; 17=175mb; 15=150mb; 12=125mb; 10=100mb; 07=75 mb; 05=50mb
86 = Boundary Layer (SPDY)
89 = Reduced to Sea Level (MSL)
94 = Level of 0 degrees C
96 = Level of the Maximum wind
97 = Level of the Tropopause
98 = Surface, 10 m above ground, 80 m above ground, 2 m above ground, 1st hybrid level
01 = Refer to GRIB PDS
73 = Cloud Base Level
74 = Cloud Top Level or Convective Cloud Top Level
63 = Low Cloud Layer
64 = Mid Cloud Layer
65 = High Cloud Layer

4. Total volume of data per day
.0021 GB (22 files/per cycle) x 24 = 1.1 GB per day.

5. RAP Sample test files and WMO headers are on Tide or Gyre:
- RAP sample test files in the directory:
/pcom2/para/rap/grib2.tXXz.awprap200*

- All complete list of WMO headers for RAP grid 200 output can be found in:
/meso/save/Corey.Guastini/nwprod/rap.v3.0.0/util/parm/wmoheaders_rap200.txt